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**UTILITY
PATENT APPLICATION
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(Only for new nonprovisional applications under 37 CFR 1.53(b))

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First Named Inventor or Application Identifier			
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APPLICATION ELEMENTS
See MPEP chapter 600 concerning utility patent application contents.

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1. ☒ Fee Transmittal Form
Submit an original, and a duplicate for fee processing
2. ☒ Specification [Total Pages 19]
(preferred arrangement set forth below)
 - Descriptive title of the Invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R&D
 - Reference to Microfiche Appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings *(if filed)*
 - Detailed Description of the Invention (including drawings, *if filed*)
 - Claim(s)
 - Abstract of the Disclosure
3. ☒ Drawing(s) (35 USC 113) [Total Sheets 6]
4. ☒ Oath or Declaration (unexecuted) [Total Sheets 2]
 - a. ☐ Newly executed (original or copy)
 - b. ☐ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 17 completed)
[Note Box 5 below]
 - i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33 (b).
5. ☐ Incorporation By Reference *(useable if Box 4b is checked)*
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.

6. ☐ Microfiche Computer Program *(Appendix)*
7. ☐ Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
 - a. ☐ Computer Readable Copy
 - b. ☐ Paper Copy (identical to computer copy)
 - c. ☐ Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. ☐ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)
10. ☐ English Translation Document *(if applicable)*
11. ☐ Information Disclosure ☐ Copies of IDS
Statement (IDS)/PTO-1449 Citations
12. ☐ Preliminary Amendment
13. ☒ Return Receipt Postcard (MPEP 503)
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Statement(s) Status still proper and desired
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METHOD FOR RENEWING MEDICAL PRESCRIPTIONS

TECHNICAL FIELD

The present invention relates generally to the pharmaceutical prescription industry, particularly to the renewal of pharmaceutical prescriptions.

BACKGROUND

A physician-patient meeting usually results in a diagnosis, with the physician writing a prescription for a pharmaceutical drug to treat the patient's diagnosed problem. In writing the prescription, the physician will ideally verify that the pharmaceutical drug is on formulary. The formulary is a list that informs prescribing physicians and pharmacists of the pharmaceuticals for which insurance providers will pay. The formulary may contain brand name or generic pharmaceuticals or both. In this regard, generic pharmaceuticals have the same active ingredients, strength, and dosage as their brand name counterparts, and are therapeutically equivalent to them.

In situations where patients have a chronic condition, such as high blood pressure or high cholesterol, the patient requires medication for a sustained period. An original prescription for a pharmaceutical drug to treat a chronic condition (a chronic medication), may include one or more refills authorizing the pharmacy to dispense additional medication in accordance with the original prescription without further authorization from the prescribing physician. Moreover, patients with chronic conditions often require the physician to re-prescribe or renew prescriptions for chronic medication over time. The original prescription typically contains the patient's name, the pharmaceutical's name, the prescribed dosage, and any renewal or refill information.

The original prescription is typically given to a pharmacy (whether retail, mail-order, on-line, or otherwise) that inputs the prescription information, along with the patient's pharmacy benefits and insurance information, into a computer and checks with the appropriate Pharmacy

Benefit Management organization (PBM), or a PBM group at an insurance company, via telephone or on-line computer connection to ensure that the prescribed pharmaceutical drug is on the formulary.

PBMs track the prescriptions written by each physician who has a contracted with one or more of the health care plans affiliated with the PBM. PBMs administer prescription pharmaceutical claims, establish formularies, track physician prescribing patterns, provide education to improve their efficiency and cost effectiveness, and provide disease management programs. PBMs also seek to control the cost of prescription pharmaceuticals.

To lower the costs of prescription pharmaceuticals, PBMs negotiate prices on medications with pharmaceutical manufacturers. PBMs then determine price-performance profiles for every pharmaceutical on the market. Given that different pharmaceutical companies negotiate different prices with pharmaceutical manufacturers, the resulting price-performance profiles necessarily vary. For example, two pharmaceuticals for the treatment of high blood pressure will likely have two different price-performance profiles, each dependent upon the price a PBM pays the pharmaceutical manufacturer for the pharmaceutical.

Depending on its price-performance profile, a PBM will assign a status to each pharmaceutical on that PBM's formulary list. Typically, and by way of example, the statuses will be: preferred, approved, approved with prior authorization by the health insurance provider, available only if dispensed as a generic, and not approved. A pharmaceutical that has no formal status on a formulary or that has a "not approved" status is considered to be "off-formulary." The status of any particular pharmaceutical will, therefore, determine whether and to what extent a patient's health care plan will pay for the purchase of that pharmaceutical.

In addition to this use of formularies, some health care plans also provide physicians with a monthly pharmaceutical budget, financially penalizing physicians who go over budget and rewarding those physicians who are under budget. This is commonly referred to as "risk sharing" or "risk pooling."

For any number of reasons, PBMs revise their formularies frequently. As a result, there are often changes to the formulary that the patient and his physician may not be aware of. Thereafter, the patients might learn of the change only when advised by their pharmacist, or when they collect their prescription medication and notice a difference. Due to this late notice, there is frequently insufficient time to appeal or otherwise respond to the change.

PBMs communicate their formularies to physicians by mailing them binders containing formulary information every three to six months. Each health care plan has its own formulary so

a physician may receive as many as one hundred different binders, though twenty to thirty is more typical. The content of the formulary is reinforced by a PBM "detail" force of PBM representatives who visit the physician periodically. Despite possessing the binders and the efforts of the "detail" force, physicians typically have a low compliance with the formularies.

For the most part, PBMs enforce their formularies at the pharmacy. When a patient submits a prescription, the pharmacist uses an on-line system to verify that the medication is listed on the patient's health care plan's formulary. If the medication is on-formulary, the pharmacy dispenses it, generally with a small co-payment by the patient. If it is off-formulary, and the prescribing physician has not authorized a generic substitute or a generic substitute does not exist, the patient either pays for the medication himself or the pharmacist calls the prescribing physician's office to request an alternative. This process is time consuming, and it requires the patient either to wait in the pharmacy or to return at a later time to obtain the medication.

Eventually, a patient with a chronic condition consumes the first supply of the prescribed medication. If the original prescription authorizes re-fills, the pharmacy will dispense a re-fill without further contact or authorization from the prescribing physician, assuming, of course, that the prescribed pharmaceutical remains listed on the formulary. If, however, the prescribed pharmaceutical is no longer listed on the formulary and the physician has not authorized a generic alternative, either the pharmacy must call the physician for a substitute or the patient must pay the full retail price for the off-formulary re-fill of the pharmaceutical (Under California law, PBMs must continue to pay for pharmaceuticals whose formulary status has changed). This process is repeated until the pharmacy dispenses the last authorized re-fill (if any), after which the patient or the pharmacy must contact the physician for a prescription renewal.

A renewal or re-prescription is a new prescription based at least in part upon the original prescription, i.e. for a pharmaceutical drug in the same therapeutic category (often the identical pharmaceutical drug), requiring a new authorization from the physician. While based on the therapeutic category of the pharmaceutical drug in the original prescription, the renewal prescription may change based upon revisions to the patient's insurance company's list of approved medications (the "formulary"), the patient's condition at the time of the renewal, or other factors.

Typically, a physician will have many patients with chronic health problems that require "chronic medications" (approximately 44%). As a result, substantial point-of-care inefficiencies arise in refilling and renewing prescriptions for chronic medications. Thus, on any given day, a physician will receive multiple calls requesting authorization for substitute pharmaceuticals that

have changed formulary status in a re-fill or renewal situation. In the re-fill situation, the physician must take the time to determine an appropriate substitute that is on-formulary. In the renewal situation, the physician must take the time to evaluate several issues before authorizing a new prescription, namely: (1) whether the patient should continue taking the chronic medication;

5 (2) whether to change any of the parameters of the prescription, *e.g.* brand or dosages; and/or (3) whether the chronic medication remains on-formulary and if not to identify a therapeutically equivalent pharmaceutical that is on-formulary.

In each case, the prescribing physician must deal with the inefficiencies attendant with the original prescription process, such as looking up the formulary status, dealing with a hard-copy of

10 outdated formularies, reviewing the patient's records, etc. Additionally, because prescribing physicians typically must perform these duties at or very near the time of the pharmacy's telephone call, they are unable to address these issues efficiently, such as by addressing them in batches, verifying that a pharmaceutical is "preferred" by the PBM, etc.

These problems in dealing with formularies generate significant inefficiencies for the physician, and this translates into difficulties for PBMs seeking to control the costs for re-fill and renewal prescriptions. For example, physicians having to make rushed decisions when phoned for renewals are likely to default to the same chronic medication without checking the formulary to see if a different medication is now preferred by the PBM. Even if a chronic medication remains on-formulary, this is nonetheless a missed opportunity for a PBM to communicate its preferences

15 to the prescribing physician because the physician has simply defaulted to the previously prescribed chronic medication without consulting the formulary list.

Preferred pharmaceuticals exist where PBMs have worked out special pricing or similar arrangements with pharmaceutical manufacturers. Therefore, despite the presence of more than a single medication on the formulary, PBMs might prefer one pharmaceutical over another. Even

25 prescribing physicians who check the formulary are likely only to verify that the pharmaceutical is on-formulary, without determining whether that pharmaceutical is preferred by the PBM. Similarly, in the case of re-fills, a prescribing physician forced to determine an equivalent chronic medication that is on-formulary is not likely to determine whether a specific on-formulary pharmaceutical is preferred by the PBM over another therapeutically equivalent pharmaceutical.

Prescribing physicians have the responsibility to care for their patients, and, ultimately, they want to have more control over the decisions relating to their patient's care. PBMs and their formularies represent an intrusion into physicians' decision making processes and generate animosity among the physician community. As a result of this animosity, physicians are resistant

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to becoming more cooperative and compliant with the PBMs. This animosity, reluctance to comply with PBMs, and the missed communication opportunities between the PBMs and the prescribing physicians reduces compliance with formularies and decreases PBMs' flexibility to have more dynamic, cost efficient formularies.

Accordingly, there is a need in the art to increase the efficiency of using formularies at the point-of-care with a concomitant reduction of the intrusion in the decision-making process. Any improvement in the efficiency of the renewal prescription process would greatly assist in improving the overall efficiency of the prescription process as a whole. To this end, there is a need in the art for a system and/or method that will increase a physician's efficiency in handling renewal and/or refill prescriptions, especially for chronic medications.

SUMMARY OF THE INVENTION

The present invention provides a method for renewing a pharmaceutical prescription via an electronic network. The invention further permits prescribing physicians to review prescription renewal requests in batches, thereby increasing the efficiency of the process by reducing distraction caused by multiple calls for renewals. Additionally, it provides the prescribing physician with at-hand, up-to-date formulary information, drug-drug reaction information, patient specific information (e.g. patient's medical history), and low cost alternatives to facilitate the review, thereby reducing the time that is required to research this information using traditional methods.

A preferred embodiment of the present invention includes the steps of generating a request for the renewal of a prior prescription, transmitting the request to a prescriber for review and authorization, and receiving an authorized renewal prescription from the prescriber. A dispenser is then notified to fill the electronic renewal prescription. In a further embodiment of the present invention, the prescriber receives the electronic renewal request using an electronic device, such as a computer or a personal digital assistant, which request has specific data fields therein that point to information stored on the electronic device. This electronically stored information may facilitate the prescriber's review of the renewal request. More specifically, the electronically stored information includes, without limitation, formularies, pharmaceutical- pharmaceutical reaction data, and/or patient specific data. After reviewing the request, the prescriber may view the prescription or renewal, modify the request, and/or digitally sign and transmit the authorized renewal prescription back to the appropriate entity for fulfillment.

BRIEF DESCRIPTION OF THE DRAWINGS

For a better understanding of the nature and objects of the invention, reference should be made to the following detailed description, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a diagrammatic view of an electronic network for renewing prescriptions in accordance with an embodiment of the present invention;

FIG. 2 is a diagrammatic view of the dispenser memory shown in **FIG. 1**;

FIG. 3 is a diagrammatic view of the prescriber memory shown in **FIG. 1**;

FIG. 4 is a flow chart showing a dispenser side method for filling original prescriptions in accordance with an embodiment of the present invention;

FIG. 5 is a flow chart showing a dispenser side method for filling a refill and authorized renewal prescriptions in accordance with an embodiment of the present invention;

FIG. 6 is a flow chart showing a renewal server side method used to generate and transmit a request for a renewal prescription in accordance with an embodiment of the present invention; and

FIG. 7 is a flow chart showing the prescriber side method for authorizing a renewal prescription in accordance with an embodiment of the present invention.

Like reference numerals refer to corresponding parts throughout the several views of the drawings.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The present invention provides a means for renewing a pharmaceutical prescription via an electronic network. As used herein, a pharmaceutical is defined as any chemical substance used in the diagnosis, treatment, or prevention of a disease, illness, medical condition, or as a component of a medication. A pharmaceutical may further be defines as any therapeutic product used in medicine, or a drug derived from organic or inorganic chemicals and used to treat a wide range of medical conditions.

FIG. 1 is a diagrammatic view of an electronic network **100** for renewing prescriptions in accordance with an embodiment of the present invention. The network **100** comprises a series of points or nodes interconnected by communication paths. The network **100** may interconnect with other networks, may contain subnetworks, and may be embodied by way of a local area network (LAN), a metropolitan area network (MAN), a wide area network (WAN), or a global network (the Internet). The network **100** may further be characterized by the type of access service used,

such as PSTN (Public Switched Telephone Network), ISDN (Integrated Services Digital Network), DSL (Digital Subscriber Line), ATM (Asynchronous Transfer Mode), T-carrier system, etc. In addition, network **100** may be characterized by the type of protocols used on it, such as WAP (Wireless Application Protocol), TCP/IP (Transmission Control Protocol/Internet Protocol), NetBEUI (NetBIOS Extended User Interface), or IPX/SPX (Internetwork Packet Exchange/Sequenced Packet Exchange). Additionally, the network **100** may be characterized by whether it carries voice, data, or both kinds of signals; by who can use the network **100** (whether it is public or private); and by the usual nature of its connections (e.g. dial-up, dedicated, switched, non-switched, or virtual connections).

The network **100** connects a plurality of pharmaceutical dispensers **110** and authorizing prescribers **104** to at least one renewal server **102**. This connection is made via a communication or electronic network **106** that, as mentioned previously, may comprise an Intranet, wireless network, or preferably the Internet. The connection is made via communication links **108**, which may, for example, be coaxial cable, copper wire (including PSTN, ISDN, and DSL), optical fiber, wireless, microwave, or satellite links. Communication between the prescriber, dispenser, and the renewal server preferably occurs via Internet protocol (IP) or an optionally secure synchronization protocol, but may alternatively occur via electronic mail (email).

As used herein, a dispenser is a retail-store pharmacy, a mail-order pharmacy, an on-line pharmacy, a PBM acting as a pharmacy, a PBM acting in conjunction with any of the former, or any entity or person authorized to dispense prescription pharmaceuticals. As used herein, an authorizing prescriber is a person having the authority to authorize a dispenser to dispense a pharmaceutical. Depending on the laws of any particular jurisdiction, such a person includes, without limitation, physicians, physician assistants, registered nurses, or persons acting under the direction of these individuals.

The renewal server **102** is shown in **FIG. 1**, and is described below as being distinct from the dispensers **110**. The skilled artisan will, however, appreciate that the renewal server **102** and the dispensers **110** may be one and the same without deviating from the scope of the present invention.

The renewal server **102** comprises at least one data processor or central processing unit (CPU) **212**, a renewal memory **220**, user interface devices **218**, a communications interface circuit **216**, and at least one bus **214** that interconnects these elements. The renewal memory **220** includes an operating system **222** (such as DOS, UNIX™, Windows™, Linux™, OS/2™, AS/400™, PalmOS™, AIX™, NEXTSTEP™, OS/390™, OS/9™, OS/9000™, VMS™, CP/M™, Solaris™, or

MacOS™), which may store instructions for communicating, processing data, accessing data, storing data, searching data, etc. The renewal memory **220** also includes remote access procedures **224** and a renewal notification procedure **226**.

The renewal memory **220** further includes a renewal database **228** preferably containing a plurality of patient profiles **230(1)** and **230(N)**. Each patient profile **230(1)** and **230(N)** preferably contains patient information **232**, such as contact details, information concerning the patient's medical history, the patient's medical insurance details, etc. Preferably, each patient profile **230(1)** and **230(N)** also contains a number of prescription profiles **234(1)** and **234(N)** for that particular patient. Each prescription profile **234(1)** and **234(N)** also preferably contains information such as a prescribed pharmaceutical identifier **236**, a prescriber identifier **238**, the dosage **240** of the prescribed pharmaceutical, refill details **242**, and a dispenser identifier **244**. An identifier is any means serving to identify, indicate, or name a body of data.

The dispensers **110** and prescribers **104** access the communication network **106** via remote client computing devices, such as desktop computers, laptop computers, notebook computers, handheld computers, personal digital assistants (PDA's), or the like. The prescribers **104** preferably use PDA's, as they are typically not desk bound, while dispensers **110** typically use desktop computers. The PDA's are preferably wireless, but may alternatively synchronize with a desktop computer that is itself connected to the communication network or may themselves connect to the communication network **106** via a wired connection.

The dispensers' and prescribers' computing devices, **110** and **104** respectively, preferably also include a data processor or central processing unit (CPU), user interface devices, communications interface circuits, and buses, similar to those described in relation to the renewal server **102**. The dispensers **110** and the prescribers **104** also include memories **120** and **320** respectively, described below. Memories **220**, **120**, and **320** may include both volatile memory, such as random access memory (RAM), and non-volatile memory, such as a hard-disk.

FIG. 2 is a diagrammatic view of the dispenser memory **120** shown in **FIG. 1**. The dispenser memory **120** includes an operating system **122** and remote access procedures **124** compatible with the remote access procedures **224** (**FIG. 1**) in the renewal server's memory **220** (**FIG. 1**). Preferably, the dispenser memory **120** also includes a prescription filling procedure **126** for receiving electronic prescription requests and filling such requests (prescriptions and refills thereof). Furthermore, the dispenser memory **120** preferably also includes a dispenser database **128** containing a plurality of prescriptions identified by unique prescription identifiers **130(1)** and **130(N)**. Each prescription **130(1)** and **130(N)** preferably contains patient information

132, such as contact details, information concerning the patient's medical history/records, the patient's medical insurance details, the patient's physician(s), etc. Each prescription 130(1) and 130(N) also preferably contains an pharmaceutical identifier 134, a prescribed dosage 136 for the prescribed pharmaceutical, a prescriber identifier 138, refill details 140, and renewal details 142. The refill details 140 preferably include the number of refills remaining and the date the last refill will be consumed and a date at which the refill will expire. The renewal details 142 preferably include a renewal date and a date at which the renewal will expire.

The dispenser memory 120 preferably also includes a formulary database 146 and a drug-drug reaction database 148, or a pointer thereto. Formulary database 146 includes, for example and without limitation, pharmaceutical identifiers and their associated formulary status (preferred, on-formulary, generic substitute permitted, or off-formulary).

FIG. 3 is a diagrammatic view of the prescriber memory 320 shown in FIG. 1. The prescriber memory 320 includes an operating system 322 and remote access procedures 324 compatible with the remote access procedures 224 (FIG. 1) in the renewal server's memory 220 (FIG. 1). The prescriber memory 320 preferably also includes a renewal authorization procedure 326 for creating and transmitting an authorized renewal prescription. The prescriber memory 320 preferably also include a renewal database 328 containing a plurality of patient profiles 330(1) and 330(N). Each patient profile 330(1) and 330(N) preferably contains patient information 332, such as contact details, information concerning the patient's medical history, the patient's medical insurance details, the patient's physician(s), and the like.

Each patient profile 330(1) and 330(N) also preferably contains a number of prescription profiles 334(1) and 334(N) for that patient. Each prescription profile 334(1) and 334(N) preferably contains information such as a prescribed pharmaceutical identifier 336, a prescriber identifier 338, the prescribed dosage 340 for the pharmaceutical, refill details 342, and a dispenser identifier 344. As described in co-pending application 09/487,932 filed January 20, 2000, which is incorporated in its entirety herein by reference, the prescriber memory 320 preferably also includes a formulary database 350 and a drug-drug reaction database 352. The formulary database 350 and a drug-drug reaction database 352 are periodically updated by the renewal server.

It should be noted that the various databases described above have their data organized in a manner so that their contents can easily be accessed, managed, and updated. The databases may, for example, comprise flat-file databases (a database that takes the form of a table, where only one table can be used for each database), relational databases (a tabular database in which

data is defined so that it can be reorganized and accessed in a number of different ways), or object-oriented databases (a database that is congruent, with the data defined in object classes and subclasses). The databases may be hosted on a single server or distributed over multiple servers. For ease of explanation, prescription data fields in any of the abovementioned databases will be referred to as prescription records.

FIG. 4 is a flow chart showing a dispenser side method **400** for filling original prescriptions in accordance with an embodiment of the present invention. The prescription filling procedure (**126** of **FIG. 2**) begins by receiving, at **402**, an original prescription containing prescription data, including at least a pharmaceutical identifier, a patient identifier, a prescriber identifier, the prescribed pharmaceutical dosage, and refills details. Receipt of the original prescription may occur in a number of ways, such as electronically, by fax machine, by email, by postal mail, or by hand.

If the original prescription is received by hand, the details of the original prescription are captured manually and stored in the dispenser database (**128** of **FIG. 2**), where the prescription is referenced by a unique prescription identifier (**130** of **FIG. 2**). If the original prescription is received electronically, it is preferably captured automatically and stored in the dispenser database (**128** of **FIG. 2**), where the prescription is referenced by a unique prescription identifier (**130** of **FIG. 2**).

The formulary status of the prescribed pharmaceutical is then checked, at **404**, by referencing the formulary database (**146** of **FIG. 2**). If the prescribed pharmaceutical is on the formulary list, the dispenser will be prompted, at **406**, to dispense the pharmaceutical in accordance with the prescription. If the prescribed pharmaceutical is not on the formulary list, the procedure checks, at **408**, whether a generic substitute is on the formulary list, at **408**, and if a generic substitute is on the formulary list, whether the prescriber has authorized the use of a generic substitute, at **410**. If a generic substitute is not on the formulary list or if the prescriber has not authorized a generic substitute, a notice is posted to contact the prescriber and request that he prescribe a substitute pharmaceutical, at **412**.

After the original prescription has been filled, it is determined whether the prescribed pharmaceutical is a chronic medication, at **414**. If the prescribed pharmaceutical is a chronic medication, the renewal method according to the invention notes and saves this fact, at **416**. The prescription records in the dispenser database (**128** of **FIG. 2**) are then updated, at **418**. The updated prescription records are finally transmitted to the renewal server, at **420**.

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FIG. 5 is a flow chart showing a dispenser side method **500** for filling a refill and authorized renewal prescriptions in accordance with an embodiment of the present invention. When a patient orders a refill at a dispenser, at **501**, the prescription filling procedure (**126** of **FIG. 2**) checks, at **502**, whether that refill prescription exists in its records. If the refill prescription exists, the prescription filling procedure checks whether there are any refills remaining available on that particular prescription, at **504**.

If there is no refill prescription in the records, or if no refills remain on the prescription, the dispenser transmits a renewal request to the renewal server, at **506**, *i.e.* a prescription renewal request is created before the expiration of the original or prior prescription. The prescription renewal request preferably includes a patient identifier, a pharmaceutical identifier, a dispenser identifier, a prescription identifier, a prescriber identifier, a dosage, number of refills, and a strength.

If a refill is available, the dispenser is prompted to fill the prescription, at **512**. The system then deducts one refill from the total amount of refills prescribed and saves this information, at **514**, in the prescription records in the prescription database (**128** of **FIG. 2**). The dispenser then transmits the updated prescription records to the renewal server, at **516**. Once prescribers authorize a renewal prescription, discussed in relation to **FIG. 7**, the dispenser receives the renewal prescription, at **508**, and updates its prescription records, at **510**.

FIG. 6 is a flow chart showing a renewal server side method **600** used to generate and transmit a request for a renewal prescription in accordance with an embodiment of the present invention. The renewal notification procedure (**226** of **FIG. 1**) downloads, at **602**, current prescription records from the dispenser (**110** of **FIG. 1**) and saves the prescription records to the renewal database (**230** of **FIG. 1**). The renewal database adds a dispenser identifier (**246** of **FIG. 1**) to the prescription records, at **604**. The prescription records are then saved to the renewal database, at **606**.

The renewal notification procedure then calculates when the prescribed refills will run out, and sets a renewal date a set time prior to the date when the prescribed refills will run out, such as three weeks before such a date. The renewal notification procedure then periodically determines whether the renewal date has been reached, at **610**. Once the renewal date has been reached, a renewal prescription request is generated, at **612**, and transmitted to the prescriber responsible for prescribing the original prescription, at **614**, or any other prescriber specified. Safety precautions are preferably incorporated so as to avoid a single renewal request being sent to multiple prescribers. The prescriber then deals with the renewal request as discussed in relation to **FIG. 7**.

Once the prescriber has renewed a prescription and transmitted the renewed prescription back to the renewal server, it is received, at **618**, and the new renewal details are saved into the prescription records, at **620**. The dispenser is then notified to fill the renewal prescription, at **616**. It should be noted that refills, renewal requests, and renewal prescriptions preferably expire after a predetermined time period.

FIG. 7 is a flow chart showing a procedure for authorizing a renewal prescription in accordance with an embodiment of the present invention. The prescriber (**104** of **FIG. 1**) connects to the electronic network (**106** of **FIG. 1**), more specifically the renewal server (**102** of **FIG. 1**), at **702**. The prescriber then securely logs into the renewal server, at **704**. Preferably, the secure login occurs automatically when the prescriber synchronizes his PDA with his desktop computer, but may also occur manually by having the prescriber enter a unique username and password or digital certificate and secret signing key, or the like.

The prescriber's computing device (**104** of **FIG. 1**) then downloads, preferably automatically during synchronization, all renewal request(s) directed to that prescriber, at **706**. The prescriber may at this time, or at any other time between successive synchronizations, review the renewal requests, at **708**, and deal with the requests in a batch mode or, if preferred, piecemeal.

In addition to reviewing the information provided in the renewal request itself, at **710**, additional information may be provided to the prescriber to assist in the decision making process. The renewal authorization procedure (**326** of **FIG. 3**) displays such additional information using a prescribed pharmaceutical identifier (**336** of **FIG. 3**), a patient profile (**330** of **FIG. 3**), and/or a dispenser identifier (**344** of **FIG. 3**). The additional information preferably includes, without limitation, a drug-drug reaction database (**354** of **FIG. 3**), at **714**, a formulary database (**350** of **FIG. 3**), at **716**, patient medication history, and/or low cost therapeutic alternatives. It will be recognized that these databases may be separate or combined.

Alternatively, additional information may be added to the renewal request by the renewal server (**102** of **FIG. 1**) and transferred to the prescriber therewith. The formulary database (**350** of **FIG. 3**) then preferably provides the prescriber with generic substitutes, brand name substitutes, and/or PBM preferences in addition to the formulary status of the pharmaceutical prescribed in the prescription up for renewal.

Additionally, the patient identifier and/or the unique prescription identifier points to the patient profile (**330** of **FIG. 3**) that will provide the prescriber with relevant patient information, such as previous prescriptions, or comments and notes useful to the prescriber, at **718**. If the

prescriber makes any changes, the patient's medical profile is updated, at 720. As part of the review process, the prescriber may want to, or may be required to, contact the patient for further consultation, after which the prescriber may update that patient's profile (330 of FIG. 3) with further comments. Contacting the patient may take the form of making a notation on the PDA, such as clicking on an "Ask patient to contact me" button, which ultimately is communicated to the renewal server. The patient is then contacted by back office staff, or alternatively the dispenser is contacted, to notify the patient to contact the prescriber. This may take the form of a telephone call, email, postal mail, facsimile, or the like.

A skilled artisan will recognize that the transfer of the renewal request 706 may occur using many different sets of steps other than those described above without deviating from the scope of the present invention. For example, and without limitation, the renewal server (102 of FIG. 1) could contact the prescriber's computing device or PDA to initiate the transfer of data. The ultimate result is that the prescriber has the renewal request(s) in an electronic format resident on his computer and/or PDA, such that the prescriber may review each notification at a time convenient and efficient for the prescriber.

After reviewing the renewal request, the renewal authorization procedure (326 of FIG. 3) generates an electronic renewal prescription, at 722. The electronic renewal prescription preferably includes at least a patient identifier, a pharmaceutical identifier, a prescribed dosage, a prescriber identifier, and refill details. It should be noted that the renewed prescription may have different components to the prior prescription initially prescribed. The prescriber then authorizes the renewal prescription using a digital signature, typically using an algorithm such as that provided by Certicom™ 723, and the record is saved in an authorized renewal prescription database (328 of FIG. 3), at 724.

The authorized renewal prescription is then transmitted to the renewal server for further processing, at 726. The renewal authorization procedure (326 of FIG. 3) waits for a notification from the renewal server that the authorized renewal prescription was in fact received, at 728. If it was not, the prescriber is prompted to rectify the situation (*e.g.*, re-send the renewal prescription or call the renewal server service directly), at 730. If it was received, the patient profile (232 of FIG. 1) is updated accordingly. The prescriber then preferably notifies the patient that the renewal has been authorized.

The renewal server, prescriber, and/or dispenser periodically share updates of the status of the prescription renewal requests. The status is preferably ascertained by said renewal which determines how many prescription renewal requests were transmitted to the prescriber and

establishes how many of the prescription renewal requests the prescriber has reviewed. The status is then preferably sent by the renewal server to the prescriber.

It is anticipated that the prescriber will contact the renewal server periodically, and would download multiple renewal requests at one time for review at the prescriber's convenience. It is also anticipated that the prescriber will transmit multiple authorized renewal prescriptions, rather than a single renewal request, each time he completes a review. It is in this manner that the prescriber may receive multiple requests for renewal prescriptions without receiving telephone calls from patients or pharmacies, may review the requests batch-wise, may contact patients for consultations at times convenient to the prescriber, and may check formularies. Wireless technologies permit PDAs to electronically transfer the data without the need of a wired connection.

The foregoing description, for purposes of explanation, used specific nomenclature to provide a thorough understanding of the invention. Nevertheless, the foregoing descriptions of the preferred embodiments of the present invention are presented for purposes of illustration and description and are not intended to be exhaustive or to limit the invention to the precise forms disclosed; obvious modifications and variations are possible in view of the above teachings. Modern computer equipment and software facilitate numerous configurations of the various aspects of the present invention without deviating from the scope of the invention. For example, it does not matter whether the renewal server is part of or separate from the dispenser server. Furthermore, much of the data transfer can take place in either direction, while still accomplishing the desired end, *e.g.*, transfer of information to a specific place. In addition, the various databases may be replaced by a central database. The renewal server, dispenser and prescriber then access the centralized database to obtain data. Access to the centralized database preferably occurs in real time via "always-on" connections. A skilled artisan will readily recognize that these and many other insubstantial variations of the preferred embodiments described above may be implemented without deviating from the scope of the present invention, as defined below.

What we claim is:

1. A method for renewing a prescription for a pharmaceutical via an electronic network, comprising the steps of:

generating a prescription renewal request for the renewal of a prior prescription;
transmitting said prescription renewal request to a prescriber;
receiving a renewal prescription, in response to said prescription renewal request,
from said prescriber; and
notifying a dispenser to fill said renewal prescription.

2. The method according to claim 1, wherein said generating step further comprises creating a prescription renewal request before the expiration of said prior prescription.

3. The method according to claim 1, wherein said generating step further comprises creating said prescription renewal request from the following: a patient identifier, a pharmaceutical identifier, a dispenser identifier, a prescription identifier, a prescriber identifier, a dosage, number of refills, and a strength.

4. The method according to claim 1, wherein said method further comprises the step, prior to said receiving step, of providing information useful to said prescriber for reviewing said electronic prescription renewal request.

5. The method according to claim 4, wherein said information is selected from the following: warnings for any drug-drug reactions, formulary listings, patient medication history, and low cost therapeutic alternatives.

6. The method according to claim 1, wherein said receiving step further comprises the step of acquiring a renewal prescription, wherein said renewal prescription has components that have been changed from said prior prescription.

7. The method according to claim 6, wherein said components are selected from the following: a patient identifier, a pharmaceutical identifier, a dispenser identifier, a prescription identifier, a prescriber identifier, a dosage, number of refills, and a strength.

8. The method according to claim 1, wherein said receiving step further comprises the step of acquiring an appeal from said prescriber for a patient of said prior prescription to contact said prescriber.

9. The method according to claim 8, wherein said acquiring step further comprises notifying said dispenser to inform said patient to contact said prescriber.

10. The method according to claim 8, wherein said acquiring step further comprises notifying said patient to contact said prescriber.

11. The method according to claim 1, wherein said generating, transmitting, receiving, and notifying steps occur for a plurality of prescription renewal requests and renewal prescriptions.

12. The method according to claim 1, wherein said method further comprises the steps of ascertaining a status of said prescription renewal request.

13. The method according to claim 12, wherein said ascertaining step comprises:
determining how many prescription renewal requests were transmitted to said prescriber; and
establishing how many prescription renewal requests said prescriber has addressed.

14. The method according to claim 12, wherein said ascertaining step further comprises the step of sending said status to said prescriber.

15. The method according to claim 1, further comprising the step of deleting said electronic prescription renewal request after a set time.

16. The method according to claim 1, further comprising the step of deleting said electronic renewal prescription after a set time.

17. The method according to claim 1, further comprising the steps, prior to said receiving step, of:

accepting said prescription renewal request from a renewal server, using a portable computing device;

displaying said prescription renewal request, via said portable computing device, to said prescriber;

showing said prescriber information, via said portable computing device, useful for reviewing said prescription renewal request; and

communicating said renewal request to said renewal server using said portable computing device.

18. The method according to claim 1, further comprising the initial steps of:

receiving said prior prescription;

determining whether a prescribed pharmaceutical from said prior prescription is on formulary;

dispensing said prescribed pharmaceutical based on said determining step.

19. The method according to claim 18, further comprising the steps, prior to said dispensing step, of:

ascertaining whether said prescribed pharmaceutical is a chronic medication; and storing a result of said ascertaining step for later transmission to said prescriber.

20. The method according to claim 1, further comprising the initial step of determining whether refills are available for said prior prescription.

21. The method according to claim 1, wherein said method further comprises the initial steps of:

obtaining a patient record, said record containing at least a patient identifier, a pharmaceutical identifier for a currently prescribed pharmaceutical, a number of authorized refills of the currently prescribed pharmaceutical, and a date of the last filling of the currently prescribed pharmaceutical; and

setting a renewal date before a last refill has been consumed by a patient if said number of authorized refills is greater or equal to a predetermined number.

22. A method for renewing a prescription for a pharmaceutical via an electronic network, comprising the steps of:

downloading a prescription renewal request for the renewal of a prior prescription from a renewal server;

displaying said prescription renewal request to a prescriber;

showing said prescriber information useful for reviewing said prescription renewal request;

generating a renewal request; and

communicating said renewal request to said renewal server.

23. The method according to claim 22, wherein said showing step further comprises the step of presenting said prescriber with information selected from the following: warnings for any drug-drug reactions, formulary listings, patient medication history, and low cost therapeutic alternatives.

24. A computer readable memory storing executable instructions for execution by a computer system such that said computer system functions in a specified manner, said instructions comprising:

instructions for generating a prescription renewal request for the renewal of a prior prescription;

instructions for transmitting said prescription renewal request to a prescriber;

instructions for receiving a renewal prescription, in response to said prescription renewal request, from said prescriber; and

instructions for notifying a dispenser to fill said renewal prescription.

25. A computer readable memory according to claim 24, further comprising:

instructions for downloading a prescription renewal request for the renewal of a prior prescription from a renewal server;

instructions for displaying said prescription renewal request to a prescriber;

instructions for showing said prescriber information useful for reviewing said prescription renewal request;

instructions for generating a renewal request; and

instructions for communicating said renewal request to said renewal server.

[illegible]

5

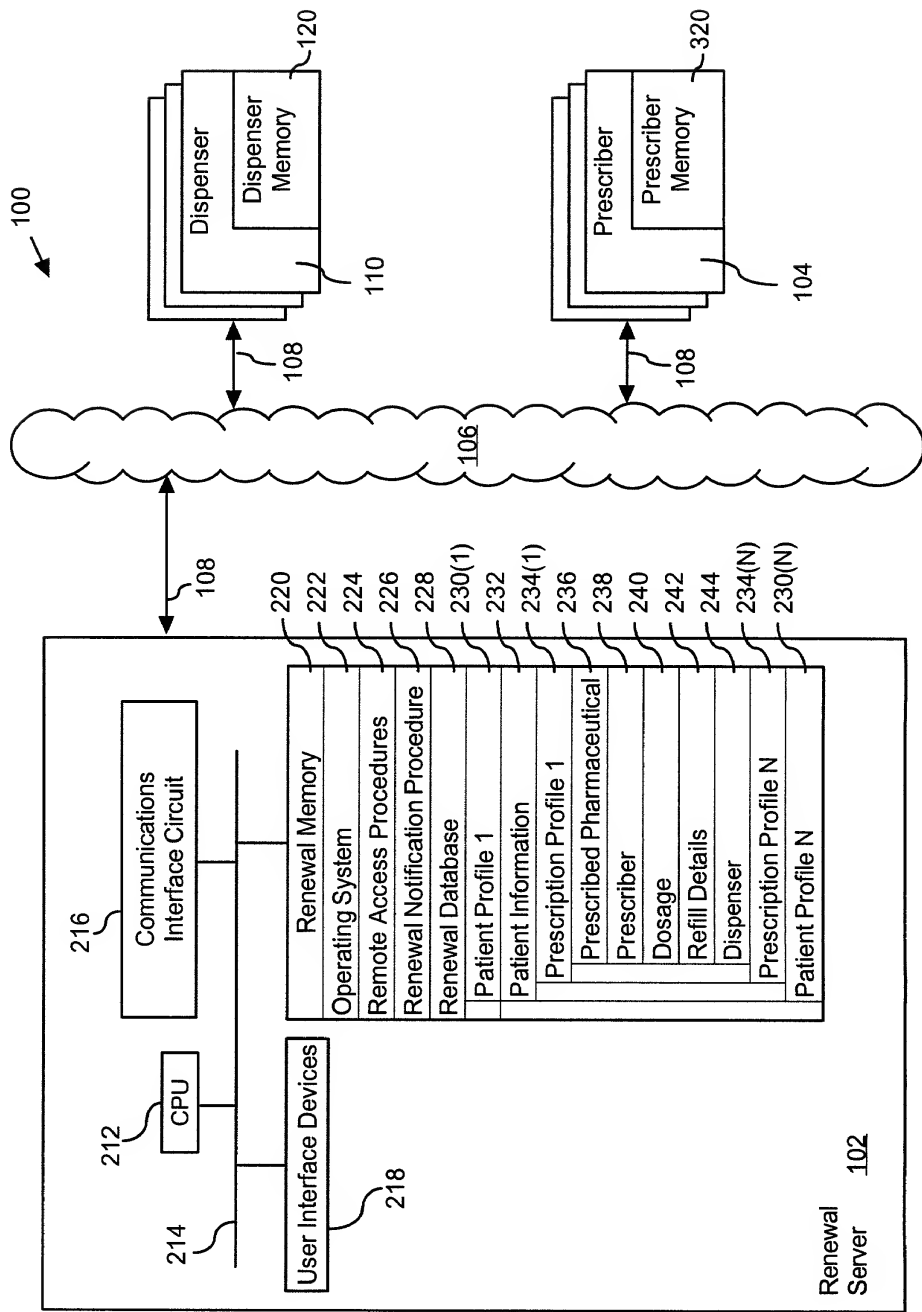


FIG. 1

Dispenser Memory	120
Operating System	122
Remote Access Procedures	124
Prescription Filling procedure	126
Dispenser database	128
Prescription 1	130(1)
Patient Information	132
Drug ID / Name	134
Dosage	136
Prescribing Physician	138
Refill Details	140
Renewal Details	142
Prescription N	130(N)
Formulary Database	146
Drug-Drug Reaction Database	148

FIG. 2

Prescriber Memory	320
Operating System	322
Remote Access Procedures	324
Renewal Authorization Procedure	326
Renewal Database	328
Patient Profile 1	330(1)
Patient Information	332
Prescription Profile 1	334(1)
Prescribed Pharmaceutical	336
Prescriber	338
Dosage	340
Refill Details	342
Other Prescription Details	344
Prescription Profile N	334(N)
Patient Profile N	330(N)
Formulary Database	350
Drug-Drug Reaction Database	352

FIG. 3

400

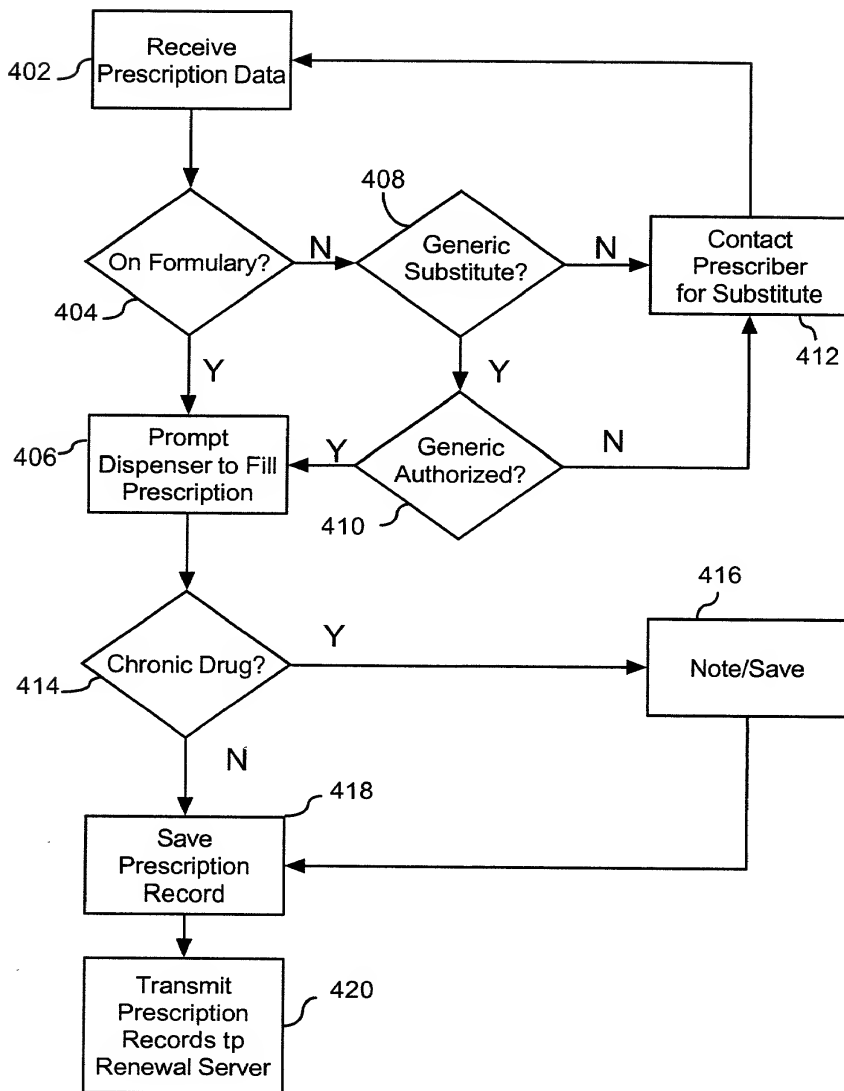


FIG. 4

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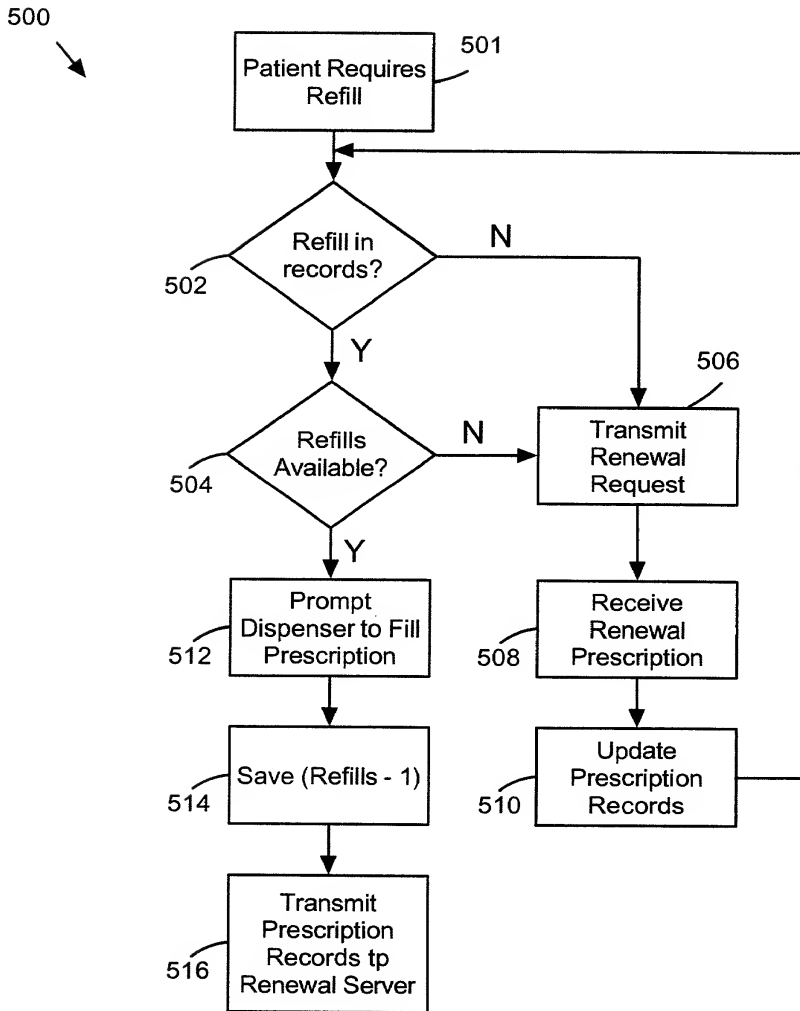


FIG. 5

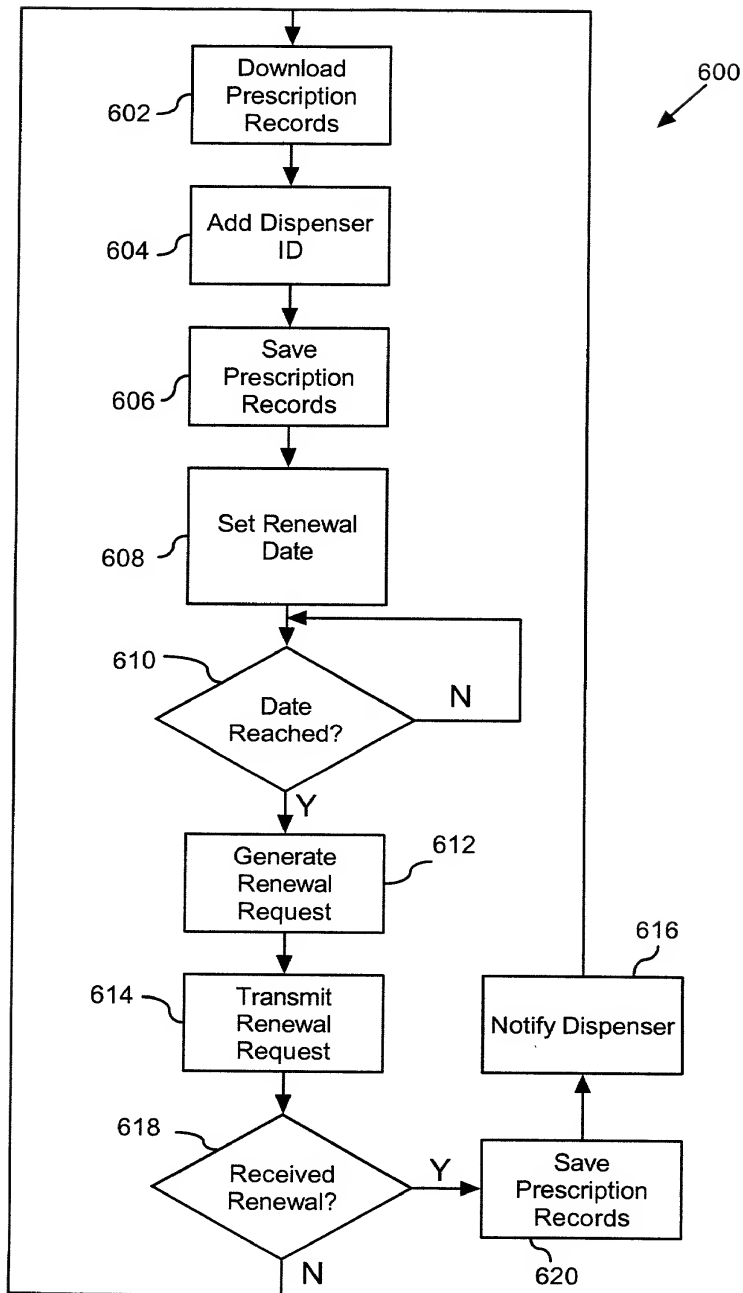


FIG. 6

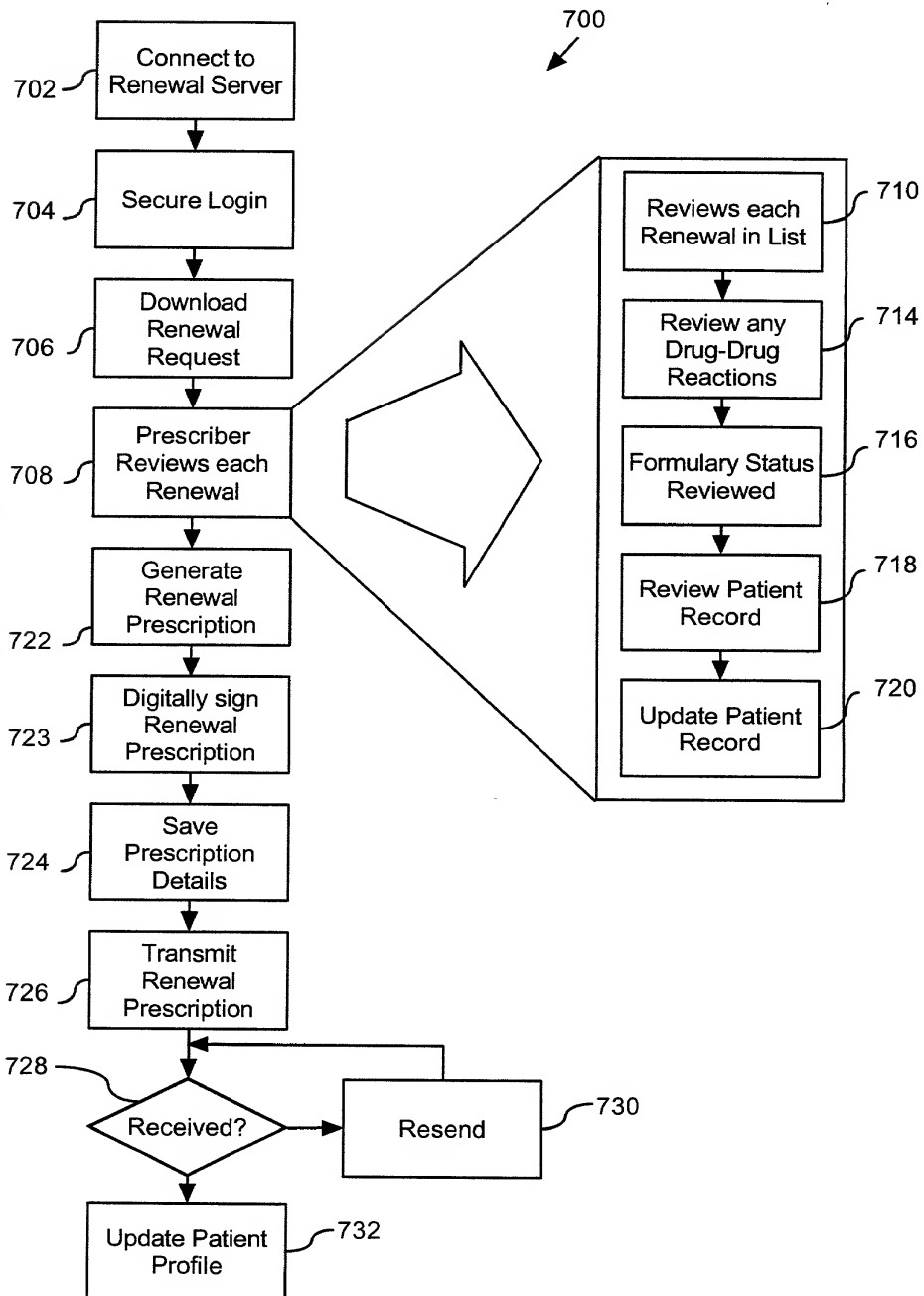


FIG. 7

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below at 201 et seq. underneath my name.

I believe I am the original, first and sole inventor if only one name is listed at 201 below, or an original, first and joint inventor if plural names are listed at 201 et seq. below, of the subject matter which is claimed and for which a patent is sought on the invention entitled

METHOD FOR RENEWING MEDICAL PRESCRIPTIONS

and for which a patent application:

- ☒ is attached hereto; and includes amendment(s) filed on _____ (if applicable)
☐ was filed in the United States on _____ as Application No. _____ (for declaration not accompanying application)
with amendment(s) filed on _____ (if applicable)
☐ was filed as PCT international Application No. _____ on _____ and was amended under PCT Article 19 on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

EARLIEST FOREIGN APPLICATION(S), IF ANY, FILED PRIOR TO THE FILING DATE OF THE APPLICATION			
APPLICATION NUMBER	COUNTRY	DATE OF FILING (day, month, year)	PRIORITY CLAIMED
			YES <input type="checkbox"/> NO <input type="checkbox"/>
			YES <input type="checkbox"/> NO <input type="checkbox"/>

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

APPLICATION NUMBER	FILING DATE

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	FILING DATE	STATUS		
		PATENTED	PENDING	ABANDONED

POWER OF ATTORNEY. As a named inventor, I hereby appoint S. Leslie Misrock (Reg. No. 18872), Harry C. Jones, III (Reg. No. 20280), Berj A. Terzian (Reg. No. 20060), David Weild, III (Reg. No. 21094), Jonathan A. Marshall (Reg. No. 24614), Barry D. Rein (Reg. No. 22411), Stanton T. Lawrence, III (Reg. No. 25736), Charles E. McKenney (Reg. No. 22795), Philip T. Shannon (Reg. No. 24278), Francis E. Morris (Reg. No. 24615), Charles E. Miller (Reg. No. 24576), Gidon D. Stern (Reg. No. 27469), John J. Lauter, Jr. (Reg. No. 27814), Brian M. Poissant (Reg. No. 28462), Brian D. Coggio (Reg. No. 27624), Rory J. Radding (Reg. No. 28749), Stephen J. Harbulak (Reg. No. 29166), Donald J. Goodell (Reg. No. 19766), James N. Palik (Reg. No. 25510), Thomas E. Friebe (Reg. No. 29258), Laura A. Coruzzi (Reg. No. 30742), Jennifer Gordon (Reg. No. 30753), Allan A. Fanucci (Reg. No. 30256), Geraldine F. Baldwin (Reg. No. 31232), Victor N. Balancia (Reg. No. 31231), Samuel B. Abrams (Reg. No. 30605), Steven I. Wallach (Reg. No. 35402), Marcia H. Sundeen (Reg. No. 30893), Paul J. Zegger (Reg. No. 33821), Edmond R. Bannon (Reg. No. 32110), Bruce J. Barker (Reg. No. 33291), Adriane M. Antler (Reg. No. 32605), Thomas G. Rowan (Reg. No. 34419), James G. Markey (Reg. No. 31636), Thomas D. Kohler (Reg. No. 32797), Scott D. Stimpson (Reg. No. 33607), Gary S. Williams (Reg. No. 31066), William S. Galliani (Reg. No. 33885), Ann L. Gisolfi (Reg. No. 31956), Todd A. Wagner (Reg. No. 35399), Scott B. Familant (Reg. No. 35514), Kelly D. Talcott (Reg. No. 39582), Francis D. Cerrito (Reg. No. 38100), Anthony M. Insogna (Reg. No. 35203), Brian M. Rothery (Reg. No. 35340), Brian D. Siff (Reg. No. 35679), and Alan Tenenbaum (Reg. No. 34939), all of Pennie & Edmonds LLP, whose addresses are 1155 Avenue of the Americas, New York, New York 10036, 1667 K Street N.W., Washington, DC 20006 and 3300 Hillview Avenue, Palo Alto, CA 94304, and each of them, my attorneys, to prosecute this application, and to transact all business in the Patent and Trademark Office connected therewith

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201, Richard Fiedotin	
DATE	
SIGNATURE OF INVENTOR 202, Dan Zucker	
DATE	